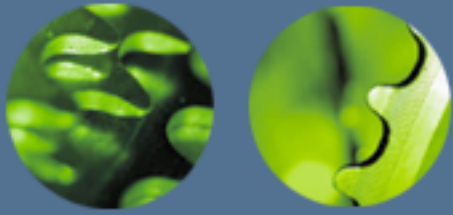




# **Industrial Water Conservation**



**Denise Zambrowski**  
Office of Technical Assistance

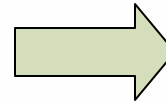


# Office of Technical Assistance

OTA is a **NON-REGULATORY** division in the Executive Office of Environmental Affairs.

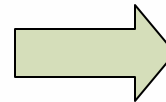
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OTA provides at **NO CHARGE** toxics use reduction and pollution prevention assistance services to all Massachusetts toxics users.



More than 3000 site visits to over 1100 facilities

The primary clients of OTA are Massachusetts industries that file under TURA.

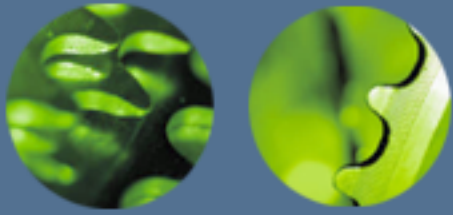


Of 504 TURA filers OTA worked with, 186 (37%) are currently NOT filing

## RESULTS



**Reduction of 213 million lbs of toxic chemicals**



# OTA's Mission

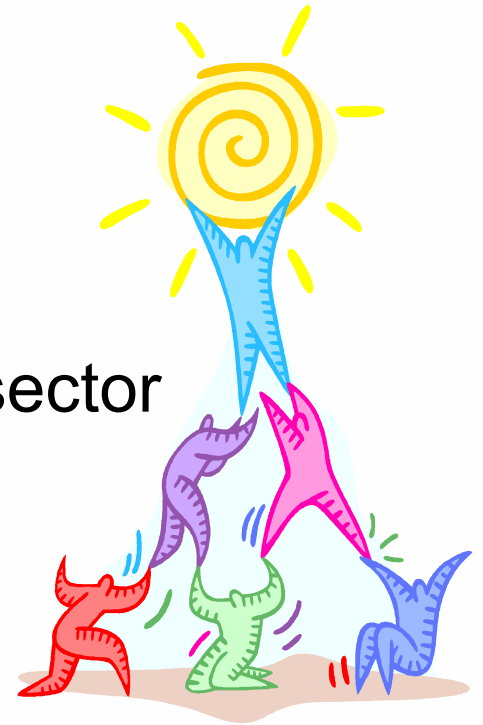
## Help constituents with:

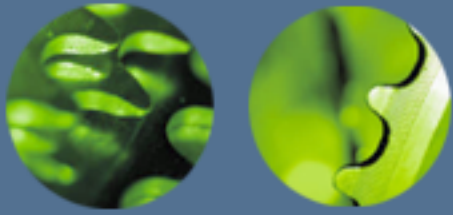
Toxics Use Reduction

Environmental Performance

Health and Safety

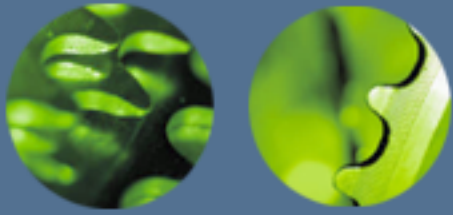
Economic competitiveness in private sector





# Why Water?

- 2005 Massachusetts Water Policy
- Revised water conservation standards
- Associated costs



# Technology in Process Seminars

Intel, Hudson  
Saved 50 million gallons/year

Cranston Print Works, Webster  
Saved 110 million gallons/year

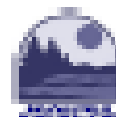
Columbia Manufacturing, Westfield  
Saved 150,000 gallons/day





# OTA Case Studies

- BOC Edwards
- Brittany Dying & Printing
- Columbia Manufacturing, Inc.
- Coyne Textile Services
- Cranston Print Works, Inc.
- GKN Sinter Metals Corp.
- Poly-Plating
- The Robbins Company
- V.H. Blackinton & Co.



Commonwealth of Massachusetts  
Executive Office of Environmental Affairs  
Office of Technical Assistance (OTA)

Updated  
January 2000

## V.H. Blackinton & Co. Toxics Use Reduction Case Study Halogen Solvent Elimination, Chemical Reduction, and Zero Discharge

### Summary

In the early 1990's V.H. Blackinton began a continuous improvement program to reduce chemical use and eliminate certain hazardous chemicals. By engaging employees and creating cross-functional teams, along with the help of the Office of Technical Assistance (OTA), V.H. Blackinton eliminated three solvents: degreasing, Penta, trichloroethylene (TCE), methanol, and mineral spirits (MS). The company made substantial investments in equipment, training, and facility upgrades, leading to significant reductions in solvent use and in the cost of waste and hazardous waste treatment and plating operations. As a result, V.H. Blackinton is no longer required to report under the Toxic Substances Law (TSLA) and has eliminated discharge to their wastewater discharge.

### Background

V.H. Blackinton & Co., Inc., North Andover, MA, is the largest manufacturer in the United States of metal machine tooling such as ladders, molders and stampers. The company also makes jewelry and other metal plated products. With a staff of 200 people, the company manufactures products from steel to brass. One designing strategy is producing new materials in packaging products for shipping. The manufacturing operations include loading, stamping, grinding and polishing, and work prior to plating, assembling, finishing, plating, and finishing.

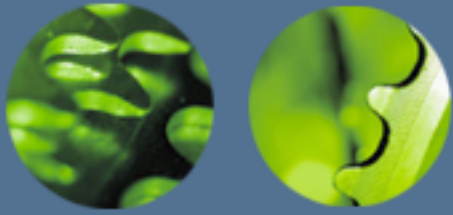
### Toxics Use Reduction

In 1990, Blackinton eliminated the use of Penta by replacing the existing solvent washing tanks with water based chemical solvent tanks and hot air. Although the new dryer, based on hot air, was a major step, it was a major step in reducing the use of Penta. The new equipment has not adversely affected productivity or quality of the product. Then in 1992, all of the TCE cleaning operations were replaced with an aqueous cleaning system using "mild green crystal dyes" approximately 100 gallons of waste liquid dyes (used annually) reduced by nearly 100% reducing the risk of toxicity and eliminating the solvent toxicity by itself. In addition, annual in tank filter, on all solvents, and investment in equipment used for plating and stamping etc. made the new aqueous cleaning system more efficient.

After installing new loading facilities with built-in air vents in the old solvent tanks, Blackinton eliminated the use of Penta. The new facilities use a 10% hydrogen and 90% nitrogen mix, eliminating over 20,000 pounds of hazardous solvents annually and reducing the use of Penta. The cost of using the new system and quality of the finished products are the same or better. The company also eliminated the use of solvent for the furnace, reducing 1000 gallons of waste per day.

Changes were also made to the company's highly efficient operations reduced the energy and time needed for the processes by 10 percent. These changes include chemical waste recovery, improved process management, and the installation of a liquid waste and a closed-loop system for cleaning operations. For example, large changes in





# On-site Assistance Program

- Water conservation for industrial processes.
- Site stormwater management.





# **Contact Us!**

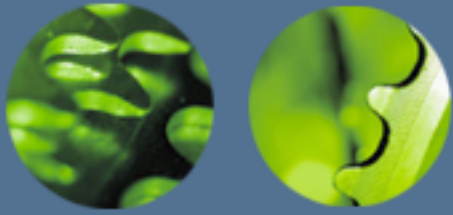
Technical Needs  
Permitting Barrier  
New Case Studies and TIPs

**Call Us!**

Ph: 617-626-1060

[www.mass.gov/envir/ota](http://www.mass.gov/envir/ota)





**THANK YOU!**

**SUSAN LANZA**

**VANDANA RAO**

